

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 13.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-008642**Date Inspected:** 21-Aug-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Oregon Iron Works Clackamas, Or.**Location:** Clackamas, OR**CWI Name:** Mike Gregson, Jose Salazar**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Hinge K Pipe Beams**Summary of Items Observed:**

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3

Hinge-K Pipe Beam Assembly 102A-1: 8/21/09

a111-1 Forging to a110-1 Base Plate

QA Inspector noticed that OIW production personell were grinding and performing weld clean-up, on the PJP and fillet welds stiffeners to a111-1 forging and a107/b106 stiffeners. QA Inspector spoke with lead QC Inspector Mike Gregson and Mr. Gregson explained that OIW production personell were blending the weld start/stops, removing weld spatter and repairing undersize welds in specific areas, which were previously marked by QC Inspector Jose Salazar. Mr. Gregson also explained that the completed fillet and PJP welds on the radial stiffeners, which were found to be visually acceptable per AWS D1.5 and contract requirements, were in process of 100% magnetic particle inspection by QC Inspector Jose Salazar. QA Inspector noted that the in-process visual and magnetic particle testing by OIW QC Inspectors appeared to be in compliance with AWS D1.5 and contract requirements.

Hinge-K Pipe Beam Assembly 102A-3: 8/21/09

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a111-3 Forging to a110-3 Base Plate

QA Inspector witnessed welder #J6, Mr. Craig Jacobson, was in process of submerged arc welding (SAW), on the a1106 stiffener plate to a110-3 base plate, designated as weld joint # W2-22, in the flat position. QA Inspector noted that this weld joint was designated as a 10mm fillet weld and QA Inspector verified Mr. Jacobson was currently qualified for this process/position. QA Inspector noted that Mr. Jacobson was utilizing OIW approved welding procedure specification (WPS 4020) and randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit. QA Inspector noticed QC Inspector Jose Salazar was present to monitor in-process welding parameters (amps/volts) and noted that Mr. Salazar had previously recorded in-process welding parameters of 405 amps and 30 volts, which appears to be in compliance with the applicable welding procedure specification and contract requirements.

Hinge-K Pipe Beam Assembly 102A-4: 8/21/09

a111-4 Forging to a110-4 Base Plate

QA Inspector noticed that OIW had previously placed this forging assembly 102A-4 in position and was in-process of machining the completed stiffeners, utilizing a mechanical machining bit. QA Inspector had previously measured the stiffener heights to be approximately 662mm and noted that approximately 12mm of material (485W) was in process of being removed, to achieve a desired result of 650mm (+3mm/-10mm), which is in accordance to contract requirements. QA Inspector spoke with OIW machinist and OIW explained that the mechanical machining bit was set to remove approximately 1/32" (.8mm) of material (485W), per each cutting pass. QA Inspector noted that once the machining process is complete, OIW will perform dimensional measurements utilizing a laser tracker, prior to fitting the a109 (Post Tension Cap) plates.

OIW Fabrication Shop-Bay 6 (ESW Overlay Process)

Hinge-K Pipe Beam Fuse Assembly 120A-2: 8/21/09

a124-3 Half Fuse to a124-11 Half Fuse

QA Inspector noticed that the ESW stainless steel overlay passes were complete, on this fuse assembly 120A-2. QA Inspector noted that the electro slag welding (ESW) first layer passes were previously completed utilizing the 309L consumable strip and second/third layers were completed utilizing the 316L consumable strip, per welding procedure specification (WPS 7003) and contract requirements. QA Inspector noticed that OIW production personnel were in-process of transferring this fuse assembly 120A-2 from the mechanical rollers and setting up fuse assembly 120A-7, for the ESW overlay passes. See attached pictures below.

Hinge-K Pipe Beam Fuse Assembly 120A-7: 8/21/09

a124-5 Half Fuse to a124-15 Half Fuse

QA Inspector noticed that this fuse assembly 120A-7 had previously arrived from AG Machining and OIW QC Inspector Steve Barnett had performed 100% magnetic particle testing on the exterior surface, after rough machining. QA Inspector reviewed the applicable magnetic particle testing report and noted that Mr. Barnett had found no rejectable indications. QA Inspector performed approximately 10% magnetic particle testing on the exterior rough machined surface, on this fuse assembly 120A-7 and found no rejectable indications. QA Inspector notified lead QC Inspector Mike Gregson of the testing results and completed the applicable magnetic testing report (TL6028). See attached picture below.

Material, Equipment, and Labor Tracking

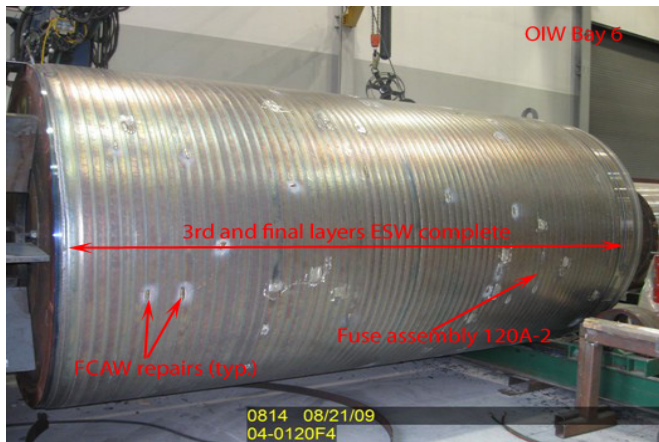
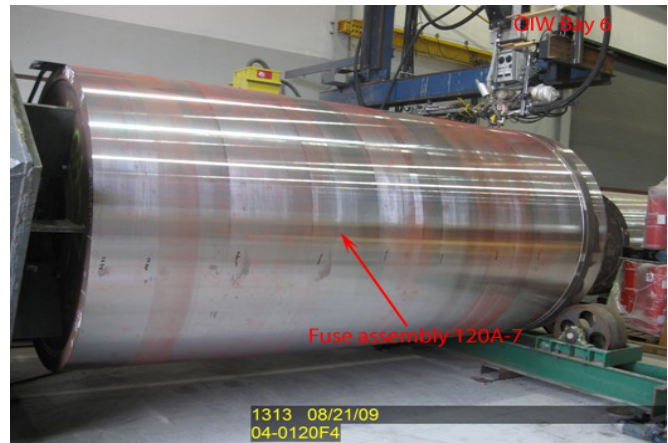
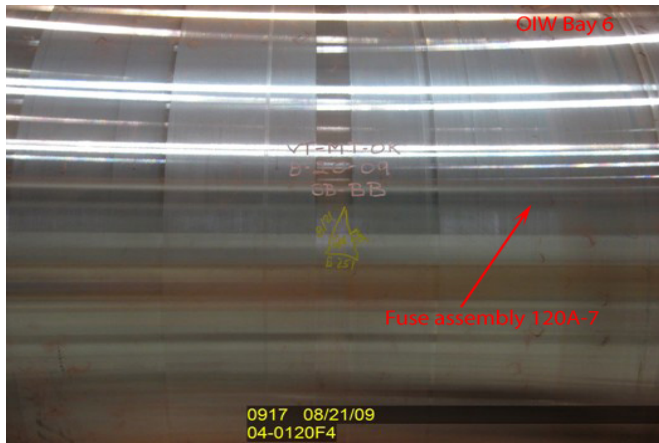
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project.

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The QA Inspector observed at Oregon Iron Works: 6 OIW production personnel and 2 QC Inspectors.

The QA Inspector observed at AG Machining: 1 Machinist using a horizontal lathe.



Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By: Vance,Sean

Quality Assurance Inspector

Reviewed By: Adame,Joe

QA Reviewer
